



C.R.I. PIPES

Pumping trust. Worldwide.

FLEXIDEEP RISING HOSE

— HIGH TENSILE STRENGTH & HIGH PRESSURE RATING FOR BORE WELL SUBMERSIBLE PUMPS —





T H E B E G I N N I N G

of C.R.I., way back in 1961, was a resolute attempt to produce a few irrigation equipments using the limited facilities of an in-house foundry. Eventually the founder's dream was coming true as the small production unit he started kept growing rapidly. Now, after more than five eventful decades, it is an enormous, widely reputed organization, which produces more than 1200 varieties of perfectly engineered pumps and motors and sells its products in numerous countries spread across 6 continents.

C . R . I . I S O N E A M O N G

the few pioneers in the world to produce 100% stainless steel submersible pumps. Having achieved a record production capacity of over 1.5 million pumps per annum, today C.R.I. is rubbing its shoulders with the best brands in the world, with advanced technology and safety standards as its hallmarks.

T H E I N F R A S T R U C T U R E

of C.R.I. is pretty comprehensive with state-of-the-art machineries and high potential in-house R&D recognised by the ministry of science and technology, Govt. of India - all within its own covered area of 150,000 square metres. The production environment is accredited with ISO 9001 & 14001 certifications and the products are CE, UR/UL, TSE & ISI certified. The R&D team always stays in tune with the changing scenario and seldom fails in coming up with outstanding solutions every time.

N E E D L E S S T O S A Y ,

behind this legendary growth lies the untiring, innovative, enthusiastic and dedicated team work. and, of course, a flawlessly maintained value system too. The name C.R.I. itself encapsulates the company's ethos: " Commitment, Reliability, Innovation".



INTRODUCTION

C.R.I.'s vast experience & successful track record in pump industry spanning over 5 decades facilitate not only to enhance the range of pumps & motors, but also to produce and supply quality pumping accessories. C.R.I.'s flexible rising hose is one among such accessories produced with specially designed formulation under integrated quality control system, right from sourcing raw materials to end process. Also adequate safety factors have been considered in designing this hose to have maximum weight carrying capacity, and to ensure longevity.

FLEXIDEEP RISING HOSE



Flexideep is a flexible rising main system used for ground water pumping and it has been designed to reduce the time of installing borehole pumps. It has superior flow characteristics and longer life. Flexideep is technologically superior and right alternate to the conventional type rigid steel or PVC pipes. Installation or removal of Steel / PVC pipes is comparatively time consuming and laborious. It is also cost effective solution to water well applications. This hose is specially designed for submersible pumps, capable of handling internal hydrostatic pressure and withstand the weight of the column water, pump with motor and cable. It doesn't require any safety rope due to its high tensile strength.



Applications :

- | Mines including De-watering | Agriculture | Water Utilities | Ground water projects
- | Industrial | Desalination Plants | Residential

FEATURES

- Made of Polyether Polyurethane with high tenacity polyester textile internal reinforcement (Standard Type)
- It doesn't corrode and no scale formation
- Minimizes vibrations and reduces noise during operation
- Light weight, easy to handle and occupies less storage space
- Packed in reel and easy to transport, which saves transport economically
- Expansion during pumping minimizes friction loss
- Hydrostatically tested for high tensile strength and pressure rating
- Easy to install and remove
- Longer life span
- Low installation and maintenance cost

LIQUID CHARACTERISTICS (MEDIUM & STANDARD)

Maximum Liquid Temperature	-40° C to +50° C
Water pH below 30° C	4 to 9
Water pH between 30° C to 50° C	5 to 9

FLEXIDEEP - MEDIUM TYPE

Flexideep MEDIUM type is made up of polyurethane material and specially designed for 4" borehole submersible pumps. This medium type can be installed upto 200 mtrs depth. The maximum length of reel is packed in 1000m.

TECHNICAL SPECIFICATIONS

DIAMETER	Inch	1¼"	1½"	2"
	mm	32	32	51
Standard colour	-	Grey	Black	Grey
Burst pressure	Bar	45	80	50
Maximum Tensile strength	kg	1200	3450	2500
*Maximum working load	kg	350	700	500
Maximum installation depth	m	100	200	100
Maximum working pressure	Bar	10	20	10
Maximum recommended flow	m³/h	6	7	20
Maximum diametric swell in operating conditions	%	1.5		
Maximum elongation in operating conditions	%	+/-1		
Weight of hose	g/m	240	270	490

* Including weight of hose, column water, pump with motor, cable, coupling and other accessories.

FLEXIDEEP - STANDARD TYPE

Flexideep STANDARD is specially designed for 6", 8" & 10" low & high head borehole submersible pumps to install maximum depth upto 258m. Flexideep is made of polyurethane with polyester textile internal reinforcement which gives more flexibility. The maximum length of the reel is packed in 500m.

TECHNICAL SPECIFICATIONS

DIAMETER	Inch	2"	3"	4"	5"	6"
	mm	52	76	102	127	152
Standard colour	-	Blue	Blue	Blue	Blue	Blue
Burst pressure	Bar	57	57	57	57	57
Maximum Tensile strength	kg	4000	7000	12000	15000	20000
*Maximum working load	kg	1600	2800	4800	6000	8000
Maximum installation depth	m	258	258	258	258	258
Maximum working pressure	Bar	26	26	26	26	26
Maximum recommended flow	m³/h	29	72	119	180	270
Maximum diametric swell in operating conditions	%	15	15	15	15	15
Maximum elongation in operating condions	%	0 to 2				
Weight of hose	g/m	570	980	1400	2000	2610

* Including weight of hose, column water, pump with motor, cable, coupling and other accessories.

ACCESSORIES

EXPANSION COUPLINGS



Pic-1

These couplings are designed for 4" submersible pumps suitable for 1¼" & 2" outlet and made of SS 316 grade material.

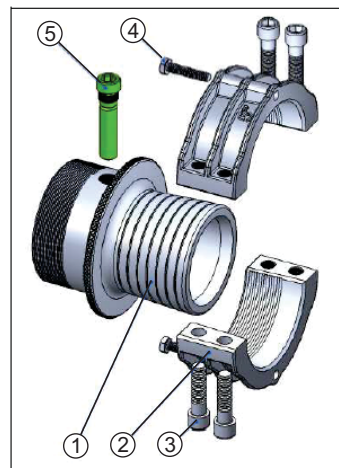
These coupling can also be used for 2" standard type hose.

COUPLING COMPONENTS

RE-USABLE CONICAL COUPLINGS



Pic-2



Pic-3

1. Coupling body- BSP or NPT thread
2. Outer clamps
3. Allen Screws
4. Jacking bolt
5. Drain fuse

Conical couplings are used to connect the pumpend with flexideep standard hose and other end of the hose will be connected to another coupling where to connect the pipe line. Re-usable conical coupling can also be used for 2" medium type hose.

TECHNICAL SPECIFICATIONS - REUSABLE CONICAL COUPLINGS

DIAMETER	Inch	2"	3"	4"	5"	6"
Material Construction	mm	SS 316	SS 316	SS 316	SS 316	SS 316
Male thread coupling	mm	2"BSP/NPT	3"BSP/NPT	4"BSP/NPT	5"BSP/NPT	6"BSP/NPT
Max. Diameter	mm	100	130	165	196	227
Total length	mm	112	160	170	185	217
Total Weight	kg	2.4	5.9	8.3	11	15.4
Allen key size	mm	10	12	14	16	18
Jacking bolt	mm	6	8	10	10	12
Drain fuse	mm	10	12	14	16	16
Max. working pressure	Bar	40	40	35	35	35

EMPTY DEVICE



Pic-4

Empty device is used to drain the column water in hose while uninstalling the pumpset. This device consists of two components named “Drain Fuse” & “Torpedo”, where the drain fuse is screwed with conical coupling (at pump outlet) while installing. At the time of removal of pump the torpedo is tied with retrieval rope and lowered till the drain fuse. Then the rope is raised about 3 meter and dropped in such way to break the drain fuse. Now the column water gets drained out till the static level and while lifting the hose sufficient time [30 sec per meter (approx)] is required to drain-out the remaining water. The drain fuse should be replaced with new one while reinstalling the pumpset ”

CABLE STRAP ATTACHMENT

Attachment loops are provided on every 0.5m to 1.0m (approx) distance in all Flexi deep rising hoses as shown in pic: 5 & 6. In 5”&6” hoses extra loops are provided on the opposite sites to hold the additional cable incase of double cable Pumpsets. For first 10m distance from the conical coupling (pump outlet) 2 cables straps to be used on every 0.5m distance and above that single cable strap to be used on every 1m distance to hold the cable tightly and avoid damages during installation.



Pic-5



Pic-6

INSTALLATION TOOLS

MOUNTING ROLLER



Pic-7

This is used for general installation and fit all sizes of Flexi deep hose. Position the Mounting roller above the borehole and firmly fitted on the base plate using bolts to prevent movement during installation. Locate the riser pipe and power cable over the roller while using vehicle assisted installation method.

MOUNTING MEASUREMENTS : Large : 1500*840*800mm Small : 750*420* 400 mm

LIFTING CLAMP

This clamp is fabricated from two steel columns tighten together using fixed bolts as shown in pic: 8. This clamp has an eye/loop on one of the steel columns, which is suitable for vehicle or crane installations methods. These clamps are to produce grip & secure the hose & pumping system during installation.

There are 2 types of clamp as Light duty & Heavy duty clamp. Light duty clamp is suitable for the use of flexi deep hose up to 3” & Heavy duty clamp is suitable for 4”,5” & 6”



Pic-8

INSTALLATION PROCEDURE (Standard Type)

Preliminary connection :

- The length of hose must be equal to the preferred depth of installation
- First screw the Drain Fuse with conical coupling and connect it firmly to the pump outlet using pipe wrench.
- Insert the hose on other end of the coupling and clamp it tightly with outer clamps.
- Attach the power cable with hose using cable strap & buckles till the end to avoid cable damage while installing.

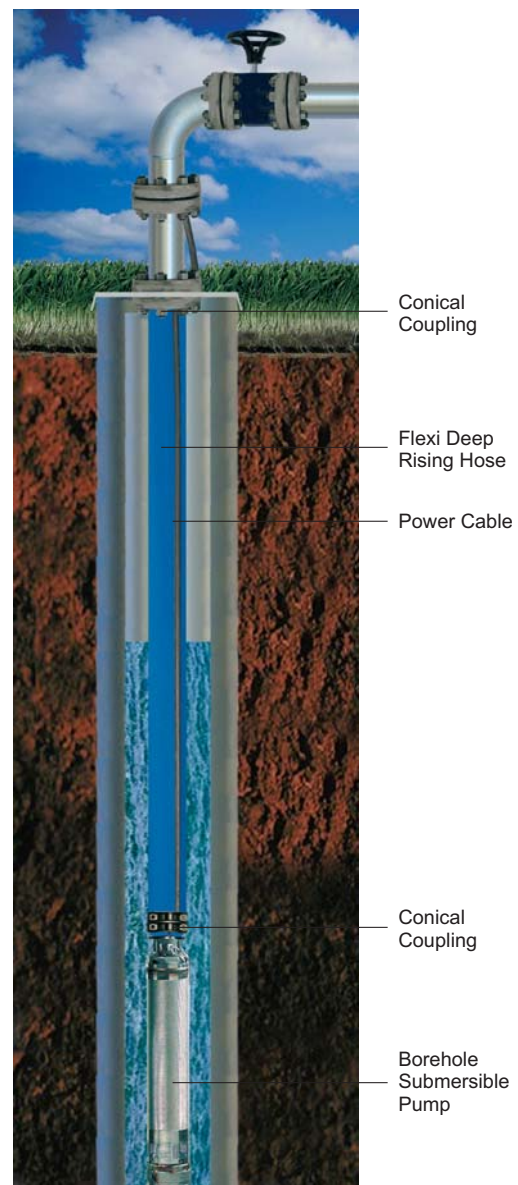
Note : Include 2% extra cable for slack elongation

Vehicle Assisted Installation :

- Fix the lifting clamp on hose, just above 0.5m distance from conical coupling on pump outlet (Keep the power cable outside of clamp)
- Fix the other end of hose with conical coupling and tight firmly with outer clamps. In the other end of coupling fix base plate with eye bolts and tie with steel / wire ropes and then rigidly tie with the vehicle kept at required distance
- Place the base of mounting roller over the borehole, in such a way to keep the roller right above the hole.
- Lift the pump set using lifting clamp by crane or forklift and lower it into bore hole till the lifting clamp rests over the casing pipe
- Place the roller on the mounting frame and bring the hose over the roller.
- Now remove lifting clamp and drive the vehicle carefully so that the pumpset is lowered smoothly in to bore hole with the help of roller.
- Once the pumpset reached required depth, clamp it near to casing pipe
- Remove the top coupling from the vehicle and lift using crane or fork lift.
- Remove lifting clamp and lower remaining portion completely and then start surface plumbing work

Crane Installation:

- Fix two lifting clamps successively at a distance equal to the distance between crane arm & casing pipe [say the distance "L" meters]
- Lift the pump set using first lifting clamp by crane and lower into bore hole till the clamp rests over the casing pipe
- Leaving the first clamp from crane, lift the second lifting clamp
- Remove the first clamp from the hose and re-fix at the distance "L" meters from the second clamp
- Now lower the pumpset and repeat the same process till the complete length of the hose is installed, leaving 2 or 3 meters over the bore well to fix conical coupling.
- Fix end of the hose with conical coupling and in the other end of coupling fix base plate with eye bolts and then tie the eye bolts with steel / wire rope.
- Lift the conical coupling using steel/wire rope and lower remaining portion of the hose till the base plate rests on the casing pipe and then start surface plumbing work.



Pic-9



In view of continuous developments the informations / descriptions / specifications / illustrations are subject to change without notice.

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